

## Exploration of a Self-Protective Strategy in Pediatric Oncology Staff

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Oncology care is considered a stressful occupation. Little is known about the coping strategies oncology staff members use to deal with the stress of their work. The purpose of this study was to determine whether a self-protective strategy found in parents of children with cancer is also present in pediatric oncology staff. To explore this assumption, staff members' ratings were compared with the parents' ratings on the need for support and with the children's ratings on experienced pain. We also explored the characteristics which staff members attribute to the children and the parents. A total of 76 staff members, 84 children with cancer, and their 163 parents participated in the study. Both gender and number of years working in oncology care were positively associated with increased self-protective reactions in staff members. Male staff

members rated medical procedures and the pain children experience in general as less painful than did female staff members. Their judgements about experienced pain in general and the lumbar puncture procedure in particular tended to be lower than the children's ratings. Female staff members attributed more positive characteristics to children with cancer and their parents than did male staff members. Staff members with more years of experience in oncology tended to rate all three medical procedures as less painful than those with less years of experience, and they also attributed more positive characteristics to the children. Staff members should be observant to their perceptions of children and parents, especially if their experience increases. © 1996 Wiley-Liss, Inc.

**Key words:** health care professionals, pediatric oncology, coping, stress, self-protection, burnout

### INTRODUCTION

The practice of (pediatric) oncology entails dealing with life-threatening illnesses on a daily basis. This is a source of stress and makes health care workers vulnerable to "burnout" [1-3]. Burnout has been defined as the end result of stress in the professional life of a physician or caregiver resulting in apathy, suspicion, self-protection, disillusion, and depression [4]. A higher incidence of burnout in oncology care compared to other medical settings has been identified in several empirical studies [1,5,6]. In the majority of studies, most attention has been paid to work-related factors which contribute to or lessen the intensity of burnout. Factors which have been identified as contributing to burnout in oncology care are direct contact with patient/family and patient/staff ratio [1]; working in a municipal health center [5]; working in a particular unit for a greater length of time [6]; administering palliative or terminal care, reimbursement issues, and a heavy workload [2,7]. Factors associated with a lower intensity of burnout are working in an institution or university center [2,5]; feeling socially supported [1,8]; and possibilities to influence the job [9].

Occupational stress, however, is not only influenced by characteristics of the work setting. Other factors such

as the challenge of the work, attributes that individuals bring to it, and the coping mechanisms that staff members develop affect how people deal with occupational stress [10]. Personality characteristics which have been reported as important in reducing work stress are having positive personality characteristics [11]; the existence of a "hardy" personality [7]; and the type and duration of training [12]. Kash and Holland [13] summarize a number of coping strategies for adapting and coping with stress in oncology. These include recognising and monitoring problems; changing pace and eating a balanced diet; decreasing overtime; exercise; maintaining a sense of humor; seeking consultation if symptoms are severe; discussing work-related stress with others who share the same problems; visiting counterparts in other institutions; looking for new solutions to problems; noticing stress symptoms in col-

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leagues and discussing them with them and suggesting referral if needed.

Those coping strategies are mostly directed at modifying occupational stress and are therefore problem focused, while emotion-focused coping strategies are aimed at regulating the emotional response surrounding a stressful event or situation [14]. Rothbaum et al. [15] use a similar model in which primary control refers to actions aimed at bringing the environment into line with one's wishes, while secondary control refers to behaviors or cognitions directed at bringing oneself into line with the environmental forces. Such efforts to modify oneself so as to achieve goodness of fit with the prevailing situation are for example described by Peteet et al. [16]. They interviewed staff members at a cancer center about job stress and satisfaction with their work. One of their findings was that the majority of the staff members (84%) had changed their attitude or approach to oncology. These changes included, for example, changing goals (26% of the responses), re-evaluating oneself (26%), and becoming more realistic (14%). Koocher [17] advocates that one has to reflect, introspect, and be in touch with one's feelings to cope with pediatric oncology care. One cannot cope successfully by avoiding consideration of personal feelings.

Results from studies with patients and family members in oncology may be meaningful in identifying possible other coping strategies in staff members. Van Veldhuizen and Last [18] suggested that parents of children with cancer use a typical coping strategy which they called "double protection." The concept of double protection is related to illusory control, a secondary control strategy described by Rothbaum et al. [15]. It refers to coping strategies by which people attempt to associate with chance. Hoping for a miracle, wishful thinking, or creating the illusion that the child will be one of the survivors are illustrations of secondary illusory control. Van Veldhuizen and Last [18] found that the parental image of the child's emotional experiences deviated from the child's own experience of anxiety and depression. A very low percentage of parents judged their children as pessimistic or unhappy. They hypothesized that this need to perceive the other as a strong person serves as a mechanism to protect oneself against the impact of the disease. Therefore, double protection refers to achievement of self-protection via another person. By attributing positive characteristics to their child, parents create an image of the child as being vital, hence fostering the illusion that fate will be kind to them. The parents need to believe that the child is strong, because if the child can handle the situation, it increases their confidence that the child will survive. We found support for parents' attribution of positive characteristics to their children with cancer. We discovered that parents of children with cancer attributed more cheerful behavior to their children than parents of children with asthma and healthy children do (unpublished observations).

In relation to these findings, we speculate that staff members may also need to see children with cancer and their parents as strong, and presumably achieve self-protection via attributing positive characteristics to children and/or their parents. In pediatric oncology, staff members have to confront children and parents with bad news, with burdensome treatment regimens, and painful medical interventions [12,19,20]. Because of the intensity and length of care involved, a strong emotional relationship usually develops between the patient and staff. During the course of treatment, staff members may be confronted with situations in which they are uncertain about the benefits and risks of their work [21]. It is conceivable that if they create an image of children and parents who are able to manage the situation, this enables them to continue their work and to endure the continuing confrontation with the emotional turmoil of the family. With more years of experience in oncology this need to see children and parents as strong may even become increasingly necessary as a coping strategy.

The exploration of this self-protective mechanism in pediatric oncology is important. Because, if staff members attribute qualities to children and their parents which do not correspond with the children's and the parents' experiences, the emotional reactions of the children and parents could easily be underestimated. Emotional reactions which are important in pediatric oncology care are the parents' distress and their need for support [22,23] and pain-related distress in children with cancer [24,25]. Only with an adequate assessment of the concerns and needs of both children with cancer and their parents, an optimal multidisciplinary treatment is possible.

We hypothesized that the staff's need to see children with cancer and parents as strong could manifest itself in an underestimation of parents' need for support and the children's experienced pain, and in the attribution of positive characteristics to the children and the parents. Therefore, the objectives of the current study were to answer four questions: 1) Are staff members' estimation of parents' need for support and children's experienced pain influenced by their sex or experience in oncology? 2) What is the concurrence between the parents' ratings of the need for support and the hospital staff's estimation of this need for support? 3) What is the concurrence between the children's rating on experienced pain and the hospital staff's estimation of this pain? 4) Which positive characteristics do staff members attribute to children with cancer and their parents?

## MATERIALS AND METHODS

### Sample

The sample included in this study consisted of 76 staff members recruited in two hospitals in the Netherlands:

Emma Kinderziekenhuis/het Kinder AMC in Amsterdam and St. Radboud Hospital in Nijmegen. Amsterdam has a 21-bed inpatient unit, while in Nijmegen 12 beds are available for children with malignancies. Staff members were invited by letter to participate in the study and after they gave their agreement a semistructured interview took place within the hospital during working hours. In Amsterdam, all staff members involved in pediatric oncology care were invited to participate. They included oncologists, attending and junior physicians ( $n = 19$ ), and nurses in the in- and outpatient clinics ( $n = 42$ ). All medical staff members and 38 nurses cooperated. In Nijmegen, a different approach was undertaken. Oncologists ( $n = 4$ ) were invited by personal letter and nurses were invited through a general letter to the department and were asked to reply if they wished to participate. In Nijmegen all oncologists and 15 nurses agreed to cooperate. In total 53 nurses (6 males and 47 females) and 23 physicians (7 females and 16 males) of both hospitals participated. They ranged in age from 22 to 61 years with a mean age of 36.2 years ( $SD \pm 10.0$ ). Years of experience in oncology ranged from 0 to 26 years, with a mean of 6.7 years ( $SD \pm 6.8$ ). The median years of experience was 4. Forty staff members had 4 or less years of experience in oncology (33 females and 7 males) and 36 staff members had more than 4 years of experience in oncology (21 females and 15 males).

It was possible to compare data from the staff sample with the data of 84 children with cancer and their 163 patients. The data from the children and their parents were collected as part of an extensive study on double protection. For this study, children with different survival perspectives were selected, one called the remission group and the other the relapse group. Only children treated in the Emma Kinderziekenhuis/het Kinder AMC in Amsterdam were included and all children had to be between 8–18 years of age. To be eligible for the study, children in the remission group had to meet the following criteria: a) at least 4 years of age when they became ill; b) at least between 1 and 5 years without treatment. In the remission group children were selected proportional according to sex, age, and years without treatment. With regard to diagnosis (leukemia/lymphoma or solid tumors), children in the remission group were drawn on a representative basis. Children in the relapse group had to meet the following criteria: a) having had a relapse, a second malignancy, or a "stable disease" (a status of prolonged nonremission of more than at least one year); b) they were not terminally ill and were sufficiently well enough to be interviewed; and c) their last treatment had not ended more than 5 years previously. In this group we could not select children according to age, sex, or diagnosis due to a small number of available patients. In the end, the relapse group did not differ significantly from the remission group according to age and sex.

All families were invited by letter. For all children, both parents were invited to participate. Eventually, a total of 43 children in the remission group and 41 children in the relapse group were included. For five children from divorced parents, only the mother participated in the study. After approval, all families were visited at home by three interviewers who conducted a semistructured interview and administered questionnaires, each interviewer separately with one of the three family members. All interviews were conducted by the first three authors. The response rate in the remission group was 73% and in the relapse group 76%. This moderate response rate is due to the fact that all three family members had to be willing to participate. The most important expressed reason for refusal was a fear for confrontation with previous experiences and emotions. No differences were found according to age, age at diagnosis, and sex between those children with cancer who participated and those who did not. All material for this study was collected between May 1992 and April 1994.

### Measures

To answer the research questions the hospital staff was asked to rate the parents' need for support in general from staff members a) after diagnosis and b) during the first period of treatment. They were also asked to rate the pain children experience in general during three burdensome medical procedures: a) venipuncture, b) lumbar puncture, and c) a bone marrow aspiration. All these questions were assessed on a 5-point scale ranging from "none" to "very much." The staff were also asked to rate the pain they estimated that the children experienced during their illness and treatment in general. This was assessed on a 10 cm visual analog scale (pain scale). All staff's ratings are based on their general perception about parents' need for support and children's experienced pain. Parents and children were asked the same questions about support and experienced pain as were asked of the hospital staff.

To explore which characteristics staff members attribute to children with cancer and their parents, the behavioral assessment scale of Van Veldhuizen and Last [18] was administered. This scale is based on the semantic differential technique developed by Osgood et al. [26]. A subject is asked to rate a given concept on a series of seven-point bipolar rating scales. On the behavioral assessment scale, opposite behavioral dimensions are mentioned at each pole of the scale (e.g., cheerful-gloomy; optimistic-pessimistic; active-passive). Thus, we considered the poles cheerful, optimistic, etc. as the positive side of the behavioral dimensions. If the middle of the scale was chosen, it indicated that neither side of the scale is fully appropriate. Staff members were asked to complete the scale twice: once about children with cancer in general and once about parents of children with cancer

in general. A 51-item version was used with staff members to select those behavioral dimensions which were positively associated with children with cancer or their parents by "most" staff members. "Most" staff members was defined as "those items indicated on the positive side of the scale by more than 75% of the hospital staff." Following this rule, five behavioral dimensions were positively attributed to children and eight behavioral dimensions were attributed positively to parents. For further analysis, two subscale scores were computed by summing the scores across the items. One subscale contains the sumscore of the five items about children (scale range 5–35) and the other the sumscore of the eight items about parents (scale range 8–56). Higher scores on the subscales reflect the attribution of more positive characteristics to the children and the parents by the staff members. The consistency of response among the items as measured with the Cronbach alpha coefficient proved to be .54 for the items about the children and .70 for the items about the parents.

### Statistical Analysis

We compared the answers of the parents and the children of the remission group and the relapse group on all the support and pain variables using Mann-Whitney U Test and the Student's *t*-test as appropriate [27]. No differences could be found between the two subgroups on any of these variables. For this reason, and because staff members evaluated need for support and pain in general, staff members' general ratings were compared to the ratings of the whole sample of parents or children.

We decided to exclude function (physician vs. nurse) from all the analyses, because function was confounded with sex. Most of the nurses were female, while most the physicians were male. To answer the research questions, we first investigated whether the variables sex and years of experience in oncology (4 or less years of experience vs. more than 4 years experience) influenced the staff members' ratings for the support and pain variables using the Mann-Whitney U test and the Student's *t*-test. Second, multiple comparisons were made between staff members and the parents' or children's ratings. All comparative data were analyzed by the Mann-Whitney U and the Student's *t*-tests. An improved Bonferroni-adjustment, Holm's procedure<sup>1</sup> [28] to the *P* value for significance was made to account for the multiple comparisons within the support and pain variables. For the simultaneous testing procedures, a significance level of 5% was used. Finally, analyses of variance (ANOVA: 2 × 2 design) were carried out to investigate whether sex and years of experience in oncology had any influence on the staff's

attribution of positive characteristics to children with cancer and their parents.

## RESULTS

### Influence of Sex and Years of Experience

There were no significant differences between the staff members, grouped according to sex or years of experience, in their ratings concerning the parents' need for support during diagnosis and the first period of treatment. However, the analyses showed an influence of the variables sex and years of experience in oncology on the staff members' ratings concerning medical procedures (see Table I).

Thus, female staff members rated all three medical procedures as more painful than did male staff members. Those with more years of experience in oncology tended to rate all three medical procedures as less painful than did staff members with less years of experience. This difference only failed to reach significance for the lumbar puncture. Another difference was found between the staff members, grouped according to sex in their ratings, concerning the pain children experience in general ( $t = -2.73$ ,  $P < 0.01$ ). Female staff members ( $M = 62.4$ ) rated the pain in general significantly higher on the pain scale than did male staff members ( $M = 48.0$ ).

### Need for Support

The multiple comparisons between the ratings of the parents and the staff members are shown in Table II. Both the need for support after diagnosis and the need for support during the first period of treatment were rated significantly higher by all subgroups of staff members than by the parents.

### Experienced Pain

The multiple comparisons between the ratings of the children and the staff members for all three medical procedures are shown in Table III. The staff members rated the pain during a venipuncture higher than did the children. If the ratings of male and female staff members are compared to the children's ratings with multiple comparisons, it becomes clear that the differences are explained by the ratings of the female staff members. They rated the pain during a venipuncture significantly higher than did the children, while the male staff members' ratings about a venipuncture are comparable to the ratings of the children. Those staff members with fewer years of experience in oncology also rated the pain during a venipuncture significantly higher than did the children, whereas those with more experience did not.

No significant differences were found between the ratings by the children and the staff members about pain during a lumbar puncture or a bone marrow aspiration.

<sup>1</sup>Order the  $kP$  values from smallest to largest. Suppose  $i^*$  is the smallest integer from 1 to  $k$  such that  $p(i^*) > \alpha/(k-i^* + 1)$ .

**TABLE I. Comparisons Between the Ratings of Staff Members, Grouped According to Sex and Years of Experience in Oncology, About Medical Procedures (Venipuncture, Lumbar Puncture, and Bone Marrow Aspiration)**

	Male staff	Female staff	Staff with ≤4 years experience	Staff with >4 years experience
Venipuncture				
N	22	53	40	35
Median	3	4	4	3
Mean rank	26.61	42.73	43.56	31.64
z-value		-3.1080*		-2.519**
Lumbar puncture				
N	21	53	40	34
Median	3	4	4	3
Mean rank	26.14	42.00	41.55	32.74
z-value		-2.985*		-1.834
Bone marrow aspiration				
N	21	53	40	34
Median	4	5	5	4
Mean rank	26.24	41.96	41.94	32.28
z-value		-3.088*		-2.097**

Mann-Whitney U tests: \* $P < 0.01$ ; \*\* $P < 0.05$ .**TABLE II. Multiple Comparisons Between Parents' and Staff Members' Ratings About Need for Support After Diagnosis and During the First Period of Treatment**

	Parents	All staff	Parents	Male staff	Parents	Female staff	Parents	Staff with ≤4 years experience	Parents	Staff with >4 years experience
Diagnosis										
N	162	76	162	22	162	54	162	40	162	36
Median	4	4	4	4	4	4.5	4	4	4	5
Mean rank	105.69	148.95	89.08	117.66	98.10	139.69	94.78	128.71	92.40	131.43
z-value		-4.708*		-2.438**		-4.403*		-3.407***		-3.829*
First treatment										
N	162	76	162	22	162	54	162	40	162	36
Median	4	5	4	5	4	5	4	5	4	5
Mean rank	103.39	153.84	88.37	122.89	96.52	144.44	93.10	135.54	91.80	134.17
z-value		-5.540*		-2.971***		-5.119*		-4.230*		-4.193*

Mann-Whitney U tests: \* $P < 0.001$ ; \*\* $P < 0.05$ ; \*\*\* $P < 0.01$ .

However, there was a difference between the ratings of male staff members and those of the children concerning the lumbar puncture. Male staff members tended to underestimate the pain children experience during a lumbar puncture while female staff's ratings about the lumbar puncture matched the children's ratings. No significant differences were either found with multiple comparisons between the ratings of the children and staff members concerning the pain children experience in general (see Table IV). There was, however, still the same tendency as with the lumbar puncture: male staff members tended to rate the pain children experience in general as lower than did the children.

#### Attribution of Positive Characteristics

A total of five items about children and eight items about parents were chosen on the positive side of the

behavioral assessment scale by more than 75% of the staff members. The following percentages of staff members appeared to think of children with cancer as strong (90%), vigorous (90%), optimistic (84%), sensitive (83%), and hopeful (80%). Parents of children with cancer were considered as strong (95%), sensitive (95%), cooperative (93%), vigorous (90%), hopeful (83%), enterprising (80%), brave (76%), and optimistic (75%).

A main effect for sex was found for both the attribution of positive characteristics to parents [ $F(1,72) = 5.1$ ,  $P < 0.05$ ] and to children [ $F(1,72) = 10.1$ ,  $P < 0.01$ ]. Female staff members attributed more positive characteristics to parents ( $M = 46.3$ ) and children ( $M = 28.5$ ) than male staff members ( $M = 43.9$  for parents, and  $M = 26.6$  for children). Another main effect was found for years of experience concerning the positive attribution of characteristics to children [ $F(1,72) = 8.5$ ,  $P < 0.01$ ]. Staff

**TABLE III. Multiple Comparisons Between Children's and Staff Members' Ratings About Medical Procedures (Venipuncture, Lumbar Puncture, and Bone Marrow Aspiration)**

	Children	All staff	Children	Male staff	Children	Female staff	Children	Staff with ≤4 years experience	Children	Staff with >4 years experience
Venipuncture										
N	82	75	82	22	82	53	82	40	82	35
Median	3	3	3	3	3	4	3	4	3	3
Mean rank	67.08	92.03	51.41	56.55	57.16	84.76	52.93	79.07	55.65	66.84
z-value		-3.577*		-0.739		-4.150*		-3.976*		-1.702
Lumbar puncture										
N	50	74	50	21	50	53	50	40	50	34
Median	4	4	4	3	4	4	4	4	4	3
Mean rank	67.18	59.34	39.78	27.00	52.90	51.15	46.64	44.08	46.04	37.29
z-value		-1.232		-2.454		-0.308		-0.480		-1.666
Bone marrow aspiration										
N	47	74	47	21	47	53	47	40	47	34
Median	4	4	4	4	4	5	4	5	4	4
Mean rank	56.40	63.92	35.70	31.81	44.70	55.64	39.63	49.14	40.78	41.31
z-value		-1.227		-0.784		-2.032		-1.882		-0.106

Mann-Whitney U tests: \* $P < 0.001$ .

**TABLE IV. Multiple Comparisons Between Children's and Staff Members' Ratings on the Pain Scale**

	Children	All staff	Children	Male staff	Children	Female staff	Children	Staff with ≤4 years experience	Children	Staff with >4 years experience
N	83	75	83	21	83	54	83	40	83	35
Mean	63.37	58.35	63.37	47.95	63.37	62.39	63.37	60.10	63.37	56.34
SD	25.22	21.45	25.22	23.73	25.22	19.24	25.22	20.68	25.22	22.42
t-value		1.34		2.53		0.26 <sup>a</sup>		0.71		1.43

<sup>a</sup>Separated variance estimate due to significant difference between standard deviations.

members with more experience considered the children as more positive on the items ( $M = 28.7$ ) than those with less experience ( $M = 27.2$ ).

## DISCUSSION

We found some support for the hypothesis that staff members attribute positive qualities to children with cancer and their parents. Most of the staff members appeared to perceive both the children and their parents as strong, vigorous, optimistic, sensitive, and hopeful. Multiple comparisons between staff members ratings' and the parents' ratings about the need for support did not prove that these emotional reactions were underestimated. Although staff members ratings in general were comparable to the ratings of both parents and children, the gender of staff and the years of experience in oncology proved to be of importance. However, results of this study should be interpreted with caution because of the relatively small number of staff members if they were grouped according to gender or years of experience.

The results show that none of the staff members underestimated the need for support by parents; on the contrary,

staff members estimated the need for support higher than the parents indicated themselves. A substantial number of the parents indicated that they did not need or only needed little support after the diagnosis was made (25%) and during the first period of treatment (18%). Almost none (1%) of the staff members thought that parents would only need that little support. A reason for these differences in judgement could be that parents and staff members have a different conception of support. In our study, parents may have conceived support as the transference of medical information and explanation because we explicitly asked the parents about support from the hospital staff. Staff members may have conceived support in more affective terms and never judged this need for support as nonexistent.

Gender seemed to influence the need to see children and parents as strong. Female staff members rated the pain during three medical procedures and the pain children experience in general higher than did male staff members. The male staff members tended to rate the pain during a lumbar puncture and pain in general lower than did the children. Female staff members attributed more positive characteristics to both children and parents. One of the

explanations for ratings of male staff members being lower on all pain variables could be that males have learned to respond to pain this way. One may also argue that the differences can be ascribed to the function of the staff members instead of their sex. Unfortunately we were forced to exclude function from the analysis due to confounding with sex. However, comparisons of the mean ratings on the pain scale between staff members confirm that differences are only associated with sex, because no function differences are found. The ratings of male nurses decreased the mean ratings of nurses, and the ratings of female physicians increased the mean rating of physicians, confirming the sex difference.

The assessment of pain is difficult. Because pain is psycho-physiological, it is unclear whether anxiety or pain is being assessed [24,25]. Other aspects of the situation also determine how painful a medical procedure is perceived, e.g., the first experience of a child with medical procedures, which physician is applying the procedure and how it succeeds, or which pain medications have been undertaken. Also, judgments may reflect different perspectives. In a study by Manne et al. [20] it appeared that nurses' ratings were based upon overt distress, while parents' ratings reflected their subjective perception of their child's pain. Such factors may also have influenced staff members' ratings on the pain scale.

Length of experience in oncology did not seem to influence the ratings about support. However, it seemed to influence the ratings about pain during medical procedures. For all three procedures, the ratings of those who had worked longer in oncology were lower than those who had less experience. Those with more experience in oncology also more often attributed particularly positive characteristics to children with cancer. These findings give some evidence for the hypothesis that staff members perceive children with cancer as strong. This change in perception increases evidently with time spent in pediatric oncology care. So staff members should be observant of their perceptions of children and parents, especially if their experience increases.

Whether this change in perception reflects a self-protective strategy or well-observed defensive behavior in children and parents needs further exploration. If children and parents themselves use a self-protective coping strategy to protect each other against the impact of the disease, staff members themselves might be included in a mutual pretense. Staff members should not only be aware of their own perceptions of children and parents but should also be aware of the coping strategies used by children and parents themselves. There is no doubt that pediatric oncology staff members need a certain professional distance to cope with the stress of their work. However, care should meet the needs of the children with cancer and their parents. The staff's tendency to attribute positive qualities to children and parents should not interfere with

decisions about administration of pain medication or the referral to other additional support services. For this reason, it would not only be desirable to pay attention to the coping strategies of both children with cancer and their parents during medical education programs, but also to focus on self-protective behavior in staff members themselves.

In this study, staff members estimated emotional reactions of children and parents in general, and these general perceptions were compared to the perceptions of both parents and children. Consequently, we do not know whether specific characteristics of children and parents might influence staff members' ratings if they were asked to estimate emotional reactions according to gender, age, or prognosis of the child. Nevertheless, the substantial number of participants give a meaningful insight into the staff's perception on the one hand, and the parents' reported need for support and children's experienced pain on the other hand. A design for future research would be to compare ratings of staff members about particular children and their parents with the personal ratings of those children and parents themselves. Such a design would give the possibility to explore in more detail which characteristics of staff members, children, and parents determine the estimation of emotional reactions and whether the emotional reactions of particular families are underestimated.

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## REFERENCES

1. Bram PJ, Katz LF: A study of burnout in nurses working in hospice and hospital oncology settings. *Oncol Nurs Forum* 16:555-560, 1989.
2. Whipple DA, Canellos GP: Burnout syndrome in the practice of oncology: Results of a random survey of 1,000 oncologists. *J Clin Oncol* 9:1916-1920, 1991.
3. Peteet JR, Murray Ross D, Medeiros C, Walsh-Burke K, Rieker P: Relationships with patients in oncology: Can a clinician be a friend? *Psychiatry* 55:223-229, 1992.
4. Mount BM: Dealing with our losses. *J Clin Oncol* 4:1127-1134, 1986.
5. Olkinuora M, Asp S, Juntunen J, Kauttu K, Strid L, Äärimaa M: Stress symptoms, burnout and suicidal thoughts in Finnish physicians. *Soc Psychiatry Psychiatr Epidemiol* 25:81-86, 1990.

6. Bennett L, Michie P, Kippax S: Quantitative analysis of burnout and its associated factors in AIDS nursing. *AIDS Care* 3:181-192, 1991.
7. Papadatou D, Anagnostopoulos F, Monos D: Factors contributing to the development of burnout in oncology nursing. *Br J Med Psychol* 67:187-199, 1994.
8. Supple-Diaz L, Mattison D: Factors affecting survival and satisfaction: Navigating a career in oncology social work. *J Psychosoc Oncol* 10:111-131, 1992.
9. Van Servellen G, Leake B: Burnout in hospital nurses: A comparison of acquired immunodeficiency syndrome, oncology, general medical and intensive care unit nurses samples. *J Prof Nurs* 9:169-177, 1993.
10. Vachon ML, Pakes E: Staff stress in the care of the critically ill and dying child. *Issues Compr Pediatr Nurs* 8:151-182, 1985.
11. Yancik R: Coping with hospice work stress. *J Psychosoc Oncol* 2:19-35, 1984.
12. Delvaux N, Razavi D, Farvacques C: Cancer care-A stress for health professionals. *Soc Sci Med* 27:159-166, 1988.
13. Kash KM, Holland JC: Special problems of physicians and house staff in oncology. In Holland JC, Rowland JH (eds): "Handbook of psychooncology. Psychological Care of the Patient With Cancer." New York: Oxford University Press, 1989, pp. 647-657.
14. Lazarus RS, Folkman S: "Stress, Appraisal, and Coping." New York: Springer, 1984.
15. Rothbaum F, Weisz JR, Snyder SS: Changing the world and changing the self: A two-process model of perceived control. *J Pers Soc Psychol* 42:5-37, 1982.
16. Peteet JR, Murray-Ross D, Medeiros C, Walsh-Burke K, Rieker P, Finkelstein D: Job stress and satisfaction among the staff members at a cancer center. *Cancer* 64:975-982, 1989.
17. Koocher GP: Pediatric cancer: Psychosocial problems and the high costs of helping. *J Clin Child Psychol* 9:2-5, 1980.
18. Van Veldhuizen AM, Last BF: "Children With Cancer. Communication and Emotions." Amsterdam: Swets & Zeitlinger, 1991.
19. Fallowfield L: Giving sad and bad news. *Lancet* 341:476-478, 1993.
20. Manne SL, Jacobsen PB, Redd WH: Assessment of acute pediatric pain: Do child self-report, parent ratings, and nurse ratings measure the same phenomenon? *Pain* 48:45-52, 1992.
21. Brack G, LaClave L, Blix S: The psychological aspects of bone marrow transplant. A staff's perspective. *Cancer Nurs* 11:221-229, 1988.
22. Williams HA: Comparing the perception of support by parents of children with cancer and by health professionals. *J Pediatr Oncol Nurs* 9:180-186, 1992.
23. Barbarin OA, Chesler MA: Relationships with the medical staff and aspects of satisfaction with care expressed by parents of children with cancer. *J Community Health* 9:302-313, 1984.
24. Manne SL, Andersen BL: Pain and pain-related distress in children with cancer. In Bush JP, Harkins SW (eds): "Children in Pain. Clinical and Research Issues From a Developmental Perspective." New York: Springer-Verlag, 1991, pp. 337-371.
25. Sutters KA, Miaskowski C: The problem of pain in children with cancer: A research review. *Oncol Nurs Forum* 19:465-471, 1992.
26. Osgood CE, Suci GJ, Tannenbaum PH: "The Measurement of Meaning." Urbana, IL: University Press, 1957.
27. SPSS Inc: "SPSSX Users' Guide." New York: McGraw-Hill, 1983.
28. Holland BS, DiPonzio Copenhaver M: Improved Bonferroni-type multiple testing procedures. *Psychol Bull* 104:145-149, 1988.